

L Number	Hits	Search Text	DB	Time stamp
1	1112	(lithium or Li) near4 titanate	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/01 13:10
2	539	((lithium or Li) near4 titanate) and (electrode or cathode)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/01 13:11
4	42	((((lithium or Li) near4 titanate) same (electrode or cathode)) and ((carbon or graphite) same lithium)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/01 13:12
3	220	((lithium or Li) near4 titanate) same (electrode or cathode)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/01 13:29

(FILE 'HOME' ENTERED AT 14:34:39 ON 01 JUL 2003)

FILE 'CAPLUS' ENTERED AT 14:35:03 ON 01 JUL 2003

L1 32 S (LITHIUM (2W) TITANATE) (P) CATHODE
L2 3 S L1 AND ((CARBON OR GRAPHITE) (P) ANODE)
L3 0 S L1 (P) NONAQUEOUS
L4 9 S L1 AND NONAQUEOUS
L5 8 S L4 NOT L2

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YOU HAVE REQUESTED DATA FROM 8 ANSWERS - CONTINUE? Y/(N):y

L5 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:904662 CAPLUS
DOCUMENT NUMBER: 137:372620
TITLE: Secondary **nonaqueous** electrolyte battery
INVENTOR(S): Ono, Michiko; Suzuki, Masami; Udagawa, Kazuo
PATENT ASSIGNEE(S): Toshiba Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002343363	A2	20021129	JP 2001-147633	20010517

PRIORITY APPLN. INFO.: JP 2001-147633 20010517

AB The battery uses a spinel type $\text{Li}_{1-x}\text{Ti}_x\text{O}_4$ ($0.8 \leq x \leq 1.4$, $1.4 \leq x \leq 2.1$) cathode, obtained by firing a press molded mixt. of the oxide contg. a conductor, a binder and poly(acrylic acid), at 0.5-6% the wt. of the oxide, at 200-300.degree.. The binder is preferably polytetrafluoroethylene.

IT Battery cathodes
(polyacrylic acid for pore forming in manuf. of spinel type lithium titanate cathodes for secondary lithium batteries)

IT 123921-35-7, Lithium titanate ($\text{Li}_{1.33}\text{Ti}_{1.67}\text{O}_4$)
RL: DEV (Device component use); USES (Uses)
(polyacrylic acid for pore forming in manuf. of spinel type lithium titanate cathodes for secondary lithium batteries)

IT 9003-01-4, Poly(acrylic acid)
RL: NUU (Other use, unclassified); USES (Uses)
(polyacrylic acid for pore forming in manuf. of spinel type lithium titanate cathodes for secondary lithium batteries)

L5 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:388566 CAPLUS
DOCUMENT NUMBER: 136:372278

TITLE: Cathode active mass and its manufacture for secondary
nonaqueous-electrolyte battery
INVENTOR(S): Fujino, Shoichi; Sugiyama, Norimasa; Watanabe,
Hiroyasu; Hatatani, Mitsuaki; Maeda, Hideaki;
Sadamura, Hideaki
PATENT ASSIGNEE(S): Toda Kogyo Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2002151078	A2	20020524	JP 2000-347083	20001114
PRIORITY APPLN. INFO.:			JP 2000-347083	20001114
AB	The cathode active mass comprises Li cobaltate powder having 2.0-4.0 mol% coating contg. TiO ₂ and/or Li titanate on a part of its surface. The active mass is manufd. by following steps; controlling pH of an aq. soln. dispersed with Li cobaltate powder; adding a Ti salt for adsorbing Ti hydroxide colloid on the powder; filtrating; washing; drying; and then heat treating. A battery equipped with a cathode using the active mass provides high initial discharge capacity and long cycle life under high temp.			
IT	Battery cathodes (lithium cobaltate powder having titania-type coating for cathode in nonaq. battery)			
IT	Secondary batteries (lithium; lithium cobaltate powder having titania-type coating for cathode in nonaq. battery)			
IT	12190-79-3, Cobalt lithium oxide (CoLiO ₂) RL: DEV (Device component use); USES (Uses) (lithium cobaltate powder having titania-type coating for cathode in nonaq. battery)			
IT	39302-37-9P, Lithium titanate RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) (lithium cobaltate powder having titania-type coating for cathode in nonaq. battery)			
IT	13463-67-7P, Titania, uses RL: DEV (Device component use); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process); USES (Uses) (lithium cobaltate powder having titania-type coating for cathode in nonaq. battery)			

L5 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:919198 CAPLUS
DOCUMENT NUMBER: 136:40210

TITLE: Secondary **nonaqueous** electrolyte battery
 INVENTOR(S): Takada, Kenichi; Koshiba, Tokiharu
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001351628	A2	20011221	JP 2000-170120	20000607
PRIORITY APPLN. INFO.:			JP 2000-170120	20000607
AB The battery use $Li_{1+x}Ti_2-xO_4$ [$x = (-0.2)$ to $(1/3)$], having at least some amorphous areas, as active mass for cathode or anode. Preferably, the active mass has interplanar spacing 2.50-2.54 .ANG. and half peak width .gtoreq.0.12.degree. on its CuK.alpha. diffraction pattern.				
IT Battery electrodes (lithium titanate contg. amorphous phase for cathode and anode active mass in secondary lithium batteries)				
IT 123921-35-7, Lithium titanium oxide ($Li_{1.33}Ti_{1.67}O_4$) 380427-65-6, Lithium titanium oxide ($Li_{0.8-1.33}Ti_{1.67-1.80}O_4$) RL: DEV (Device component use); PRP (Properties); USES (Uses) (lithium titanate contg. amorphous phase for cathode and anode active mass in secondary lithium batteries)				

L5 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:62807 CAPLUS
 DOCUMENT NUMBER: 134:118412
 TITLE: Secondary **nonaqueous** electrolyte batteries
 INVENTOR(S): Sano, Yoko; Oshiba, Nobuharu
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001023697	A2	20010126	JP 1999-195649	19990709
PRIORITY APPLN. INFO.:			JP 1999-195649	19990709
AB The batteries use cathodes contg. WO_3 and a Li intercalating compd., where the compd. has an av. reducing potential .gtoreq.1V vs. Li at a 0.1 mA/cm ² c.d.. The compd. is $Li_4/3Ti_5/304$ and/or Nb ₂ O ₅ .				
IT Battery cathodes (tungsten oxide cathodes contg. lithium titanate or niobium oxide for secondary lithium batteries)				

IT 1313-96-8, Niobium pentoxide 1314-35-8, Tungsten oxide (WO₃), uses
12031-95-7, Lithium titanium oxide (Li₄Ti₅O₁₂)
RL: DEV (Device component use); USES (Uses)
(tungsten oxide cathodes contg. lithium titanate or niobium oxide for
secondary lithium batteries)

L5 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:96470 CAPLUS
DOCUMENT NUMBER: 130:112723
TITLE: Cathode active mass and secondary **nonaqueous**
electrolyte batteries using the mass
INVENTOR(S): Takeuchi, Hajime; Kubo, Koichi
PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9905734	A1	19990204	WO 1998-JP3339	19980727
W: JP, US				
US 6458487	B1	20021001	US 2000-463457	20000225
PRIORITY APPLN. INFO.:			JP 1997-199880	A 19970725
			JP 1997-215262	A 19970808
			WO 1998-JP3339	W 19980727

AB The cathode active mass is Li_{1+x}Mn_{2-x}yMyO₄ (M is .gtoreq.1 element other
than Mn, alkali metal, and alk. earth metal; 0 .ltoreq.x .ltoreq.0.2; and
0 .ltoreq.y .ltoreq.0.3) covered with a layer of a Mn- and Li-contg. metal
oxide, which contains metals other than Mn and Li at an amt. 0.01-20 time
the no. of atoms of Mn, detd. by XPS.

IT Battery cathodes
(lithium manganese oxide cathode active mass with lithium and manganese
contg. oxide coatings for batteries)

IT 12003-66-6, Aluminum lithium manganese oxide (AlLiMnO₄) 12003-68-8,
Aluminum lithium titanium oxide (AlLiTiO₄) 12031-95-7, **Lithium**
titanate (Li₄Ti₅O₁₂) 219737-77-6, Aluminum lithium manganese
oxide (Al₄LiMnO₈) 219737-78-7, Aluminum lithium manganese oxide
(Al₄LiMnO₁₀) 219737-79-8, Lithium manganese titanium oxide
(Li₄MnO₁Ti₄.9O₁₂) 219737-80-1, Lithium manganese titanium oxide
(Li₄MnO₅Ti₄.5O₁₂) 219737-81-2, Lithium manganese titanium oxide
(Li₄MnTi₄O₁₂) 219737-82-3, Lithium manganese titanium oxide
(Li₄Mn₂Ti₃O₁₂) 219737-83-4, Lithium manganese titanium oxide
(Li₄Mn₃Ti₂O₁₂) 219737-84-5, Lithium manganese titanium oxide
(Li₄Mn₄TiO₁₂) 219737-85-6, Lithium manganese titanium oxide
(Li₄Mn₄.5TiO₁₀.5O₁₂) 219737-86-7 219737-87-8 219737-88-9 219737-89-0
RL: MOA (Modifier or additive use); USES (Uses)
(lithium and manganese contg. oxide coatings for lithium manganese

oxide **cathode** active mass for batteries)
IT 146956-27-6, Cobalt lithium manganese oxide (Co_{0.3}LiMn_{1.7}O₄)
155472-68-7, Lithium manganese oxide (Li_{1.1}Mn_{1.9}O₄)
RL: DEV (Device component use); USES (Uses)
(lithium manganese oxide cathode active mass with lithium and manganese
contg. oxide coatings for batteries)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:81651 CAPLUS
DOCUMENT NUMBER: 130:98093
TITLE: Secondary **nonaqueous** electrolyte batteries
INVENTOR(S): Atsumi, Yoshinori; Nagamine, Masayuki
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9904442	A1	19990128	WO 1998-JP3185	19980715
W: CN, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 938148	A1	19990825	EP 1998-932537	19980715
R: DE, FR, GB				
TW 381357	B	20000201	TW 1998-87112498	19980729
US 6120938	A	20000919	US 1999-254838	19990701
PRIORITY APPLN. INFO.:			JP 1997-190176	A 19970715
			WO 1998-JP3185	W 19980715

AB The batteries use electrodes contg. Li H titanate, obtained by treating Li titanate with an acid and having a pH .ltoreq.11.2, as active mass. The active mass is preferably H_xLi_y-xTi_zO₄ (where y .gtoreq.x >0, 0.8 .ltoreq.y<2.7, and 1.3 .ltoreq.z .ltoreq.2.2) and has max. particle diam 0.1-50 .mu.m and sp. surface area 0.01-300 m²/g. The electrodes can be a cathode in batteries using Li, Li alloy, or Li intercalating anodes; or an anode in batteries using Li transition metal oxide cathodes.

IT Battery electrodes
(hydrogen contg. acid treated **lithium titanate** for
cathode and anode active mass for secondary lithium batteries)

IT 64-19-7, Acetic acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(acid treatment of **lithium titanate** for
cathode and anode active mass for secondary lithium batteries)

IT 123921-35-7, Lithium titanium oxide (Li_{1.33}Ti_{1.67}O₄)
RL: PEP (Physical, engineering or chemical process); PROC (Process)

(acid treatment of **lithium titanate** for
cathode and anode active mass for secondary lithium batteries)
IT 219542-38-8P, Hydrogen lithium titanium oxide 219542-39-9P, Hydrogen
lithium titanium oxide (H0.16Li1.14Ti1.67O4) 219542-40-2P, Hydrogen
lithium titanium oxide (H0.54Li0.8Ti1.67O4) 219542-41-3P, Hydrogen
lithium titanium oxide (H1.28Li0.02Ti1.67O4)
RL: DEV (Device component use); IMF (Industrial manufacture); PREP
(Preparation); USES (Uses)
(hydrogen contg. acid treated **lithium titanate** for
cathode and anode active mass for secondary lithium batteries)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:8249 CAPLUS
DOCUMENT NUMBER: 130:54878
TITLE: Secondary **nonaqueous** electrolyte batteries
INVENTOR(S): Kida, Yoshinori; Ohshita, Ryuki; Yoshimura, Seiji;
Nohma, Toshijuki; Nishio, Koji
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9857386	A1	19981217	WO 1998-JP2541	19980608
W: CA, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 989622	A1	20000329	EP 1998-923182	19980608
EP 989622	B1	20011031		
R: DE, FR, GB				
US 6436577	B1	20020820	US 1999-380215	19990826
PRIORITY APPLN. INFO.:			JP 1997-155436 A	19970612
			WO 1998-JP2541 W	19980608

AB The batteries use Li contg. Ni oxide based cathodes, Li₄Ti₅O₁₂ based
anodes, and nonaq. electrolyte solvent mixts. contg. .gtoreq.10 vol.%
linear carbonate esters and .gtoreq.10 vol.% cyclic carbonate esters, with
a total carbonate ester content .gtoreq.60 vol.%; where the cyclic esters
are selected from ethylene carbonate, propylene carbonate, and butylene
carbonate and the linear esters are selected from di-Me carbonate, Me Et
carbonate, Me Pr carbonate, di-Et carbonate, and Et Pr carbonate.
IT Battery cathodes
(cathode compns. for secondary lithium batteries with mixed linear and
cyclic carbonate ester electrolyte solvents)
IT Secondary batteries

- (lithium; electrode compns. and mixed linear and cyclic carbonate ester electrolyte solvents for secondary lithium batteries)
- IT Battery electrolytes
(solvent mixts. contg. linear and cyclic carbonate esters for secondary lithium batteries)
- IT 12031-95-7, Lithium titanate ($\text{Li}_4\text{Ti}_5\text{O}_{12}$)
RL: DEV (Device component use): USES (Uses)
(anodes for secondary lithium batteries with mixed linear and cyclic carbonate ester electrolyte solvents)
- IT 12031-65-1, Lithium nickel oxide (LiNiO_2) 101920-93-8, Cobalt lithium nickel oxide ($\text{Co}_0.5\text{LiNi}_0.5\text{O}_2$) 113066-89-0, Cobalt lithium nickel oxide ($\text{Co}_0.2\text{LiNi}_0.8\text{O}_2$) 113066-90-3, Cobalt lithium nickel oxide ($\text{Co}_0.6\text{LiNi}_0.4\text{O}_2$) 130941-40-1, Iron lithium nickel oxide ($\text{Fe}_0.2\text{LiNi}_0.8\text{O}_2$) 144470-88-2, Lithium nickel borate oxide ($\text{LiNi}_0.8(\text{BO}_3)_0.2\text{O}_{1.4}$) 163596-49-4, Lithium manganese nickel oxide ($\text{LiMn}_0.2\text{Ni}_0.8\text{O}_2$) 164175-47-7, Aluminum lithium nickel oxide ($\text{Al}_0.2\text{LiNi}_0.8\text{O}_2$) 193215-53-1, Cobalt lithium manganese nickel oxide ($\text{Co}_0.2\text{LiMn}_0.3\text{Ni}_0.5\text{O}_2$) 214473-74-2, Cobalt lithium manganese nickel oxide ($\text{Co}_0.45\text{LiMn}_0.05\text{Ni}_0.5\text{O}_2$) 217309-37-0, Lithium nickel titanium oxide ($\text{LiNi}_0.8\text{Ti}_0.2\text{O}_2$) 217309-38-1, Lithium nickel vanadium oxide ($\text{LiNi}_0.8\text{V}_0.2\text{O}_2$) 217309-39-2, Lithium nickel tin oxide ($\text{LiNi}_0.8\text{Sn}_0.2\text{O}_2$) 217309-40-5, Lithium nickel oxide silicate ($\text{LiNi}_0.8\text{O}_{1.2}(\text{SiO}_4)_0.2$) 217309-41-6, Lithium nickel oxide phosphate ($\text{LiNi}_0.8\text{O}_{1.2}(\text{PO}_4)_0.2$) 217309-42-7, Copper lithium nickel oxide ($\text{Cu}_0.2\text{LiNi}_0.8\text{O}_2$) 217309-43-8, Cobalt lithium manganese nickel oxide ($\text{Co}_0.3\text{LiMn}_0.3\text{Ni}_0.4\text{O}_2$) 217309-44-9, Cobalt lithium manganese nickel oxide ($\text{Co}_0.55\text{LiMn}_0.05\text{Ni}_0.4\text{O}_2$) 217309-45-0, Cobalt lithium manganese nickel oxide ($\text{Co}_0.5\text{LiMn}_0.1\text{Ni}_0.4\text{O}_2$)
RL: DEV (Device component use): USES (Uses)
(cathodes for secondary lithium batteries with mixed linear and cyclic carbonate ester electrolyte solvents)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 21324-40-3, Lithium hexafluorophosphate 35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl carbonate
RL: DEV (Device component use): USES (Uses)
(solvent mixts. contg. linear and cyclic carbonate esters for secondary lithium batteries)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:621390 CAPLUS

DOCUMENT NUMBER: 129:205226

TITLE: Secondary **nonaqueous** electrolyte batteries and method for charging the batteries

INVENTOR(S): Kida, Yoshinori; Ohshita, Ryuji; Kamino, Maruo; Yoshimura, Seiji; Nohma, Toshiyuki; Nishio, Koji

PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan

SOURCE: PCT Int. Appl., 24 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9840923	A1	19980917	WO 1998-JP923	19980305
W: CA, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 10312826	A2	19981124	JP 1997-323084	19971125
EP 1009055	A1	20000614	EP 1998-905786	19980305
R: CH, DE, FR, GB, LI				
US 6316145	B1	20011113	US 1999-308622	19990525
PRIORITY APPLN. INFO.:			JP 1997-54451	A 19970310
			JP 1997-323084	A 19971125
			WO 1998-JP923	W 19980305

AB The batteries have a polymer electrolyte between a spinel type Li titanate anode and a Li₂MnO₃-contg. MnO₂ cathode. The cathode active mass is obtained by heat treating a mixt. of MnO₂ and a Li compd., selected from LiOH, LiNO₃, Li phosphate, Li₂CO₃, and LiOAc, at 300-430.degree.. The batteries are charged by using solar cells as power source.

IT Battery anodes
Battery cathodes
Solar cells
(cathodes for solar cell chargeable polymer electrolyte lithium batteries using spinel type lithium titanate anodes)

IT Secondary batteries
(lithium; cathodes for solar cell chargeable polymer electrolyte lithium batteries using spinel type lithium titanate anodes)

IT 1317-70-0, Anatase 1317-80-2, Rutile 12031-95-7, Lithium titanate (Li₄Ti₅O₁₂)

RL: DEV (Device component use); USES (Uses)
(anodes for solar cell chargeable polymer electrolyte lithium batteries)

IT 12162-79-7, Lithium manganese oxide (LiMnO₂) 12163-00-7, Lithium manganese oxide (Li₂MnO₃) 12190-79-3, Cobalt lithium oxide (CoLiO₂)

RL: DEV (Device component use); USES (Uses)
(cathodes for solar cell chargeable polymer electrolyte lithium batteries using spinel type lithium titanate anodes)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:21099 CAPLUS
DOCUMENT NUMBER: 138:58953
TITLE: Button type secondary battery
INVENTOR(S): Edamoto, Toshiyuki; Yamaguchi, Hiroshi; Iwakawa,
Mayumi; Irihama, Hideki; Nagai, Toru
PATENT ASSIGNEE(S): Hitachi Maxell Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho. 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003007287	A2	20030110	JP 2001-190554	20010625

PRIORITY APPLN. INFO.: JP 2001-190554 20010625

AB The battery uses a carbonaceous anode having a .gtoreq.0.1 mm thick active mass, where the av. particle diam. of the carbonaceous material is .ltoreq.2 time that of the Li transition metal oxide cathode active mass.

IT Battery electrodes
(controlled relation of av. particle size between cathode and anode active mass in button type secondary lithium batteries)

IT 7782-42-5, **Graphite**, uses 39302-37-9, **Lithium titanate**
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(controlled relation of av. particle size between **cathode** and **anode** active mass in button type secondary lithium batteries)

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:564106 CAPLUS
DOCUMENT NUMBER: 135:139840
TITLE: Nonaqueous electrolyte secondary batteries for 1.5 V operation
INVENTOR(S): Fujiwara, Aiichiro; Shikoda, Masataka
PATENT ASSIGNEE(S): Toshiba Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho. 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001210325	A2	20010803	JP 2000-15917	20000125

PRIORITY APPLN. INFO.: JP 2000-15917 20000125

AB The battery comprises an nonaq. electrolyte, a spinel-structured LixTiyO4

($x = 0.8-1.4$; $y = 1.6-2.2$) cathode active material having surface treated with F-contg. compd., and Li-predoped carbonaceous anode. Preferably, the cathode active material is $\text{Li}_4/3\text{Ti}_5/304$. The batteries have excellent cycle characteristics.

- IT Secondary batteries
(lithium; nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured lithium titanate cathodes having fluoropolymer coatings)
- IT Battery cathodes
(nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured lithium titanate cathodes having fluoropolymer coatings)
- IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured lithium titanate cathodes having fluoropolymer coatings)
- IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(-doped **carbon anode**; nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured lithium titanate cathodes having fluoropolymer coatings)
- IT 159076-55-8, Lithium titanium oxide ($\text{Li}_{0.4-0.7}\text{Ti}_{0.8-1.102}$)
RL: DEV (Device component use); USES (Uses)
(**cathode**; nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured **lithium titanate** cathodes having fluoropolymer coatings)
- IT 123921-35-7P, Lithium titanium oxide ($\text{Li}_{1.33}\text{Ti}_{1.6704}$)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(**cathode**; nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured **lithium titanate** cathodes having fluoropolymer coatings)
- IT 7440-44-0, **Carbon**, uses
RL: DEV (Device component use); USES (Uses)
(lithium-doped **anode**; nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured lithium titanate cathodes having fluoropolymer coatings)
- IT 9002-84-0, Polytetrafluoroethylene
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolyte 1.5-V secondary batteries with Li-predoped anodes and spinel-structured lithium titanate cathodes having fluoropolymer coatings)

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:166285 CAPLUS

DOCUMENT NUMBER: 130:184872

TITLE: Secondary lithium batteries

INVENTOR(S): Kida, Yoshinori; Fujimoto, masahisa; Noma, Toshiyuki; Nishio, Koji

PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11067283	A2	19990309	JP 1997-247777	19970827
US 6153336	A	20001128	US 1998-141354	19980827

PRIORITY APPLN. INFO.: JP 1997-247777 A 19970827

AB The batteries use Li Ti oxide cathodes, having a compn. $\text{Li}_x\text{Ti}_{3-x}\text{O}_4$ ($1 < x < 1.5$) before the initial battery charging, and Li intercalation compd. anodes, having a compn. C_yLi ($6 < y < 6.5$) before the initial battery charging.

IT Battery electrodes
(initial compn. of electrode active mass for secondary lithium batteries)

IT Carbonaceous materials (technological products)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(initial compn. of lithium-carbon intercalation compd. active mass for secondary lithium battery anodes)

IT 37217-08-6, Lithium titanate (LiTi_2O_4) 123921-35-7, Lithium titanium oxide ($\text{Li}_{1.33}\text{Ti}_{1.67}\text{O}_4$) 220646-49-1, Lithium titanium oxide ($\text{Li}_{1.5}\text{Ti}_{1.5}\text{O}_4$)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(initial compn. of lithium titanate active mass for secondary lithium battery electrodes)

IT 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(initial compn. of lithium-carbon intercalation compd. active mass for secondary lithium battery anodes)